

~~SECRET~~

Office Memorandum • UNITED STATES GOVERNMENT
CONFIDENTIAL

SPM 7-247

TO : Chief, Engineering Division, OC

DATE: 25 November 1957

FROM : Chief, Supplemental Programs Division, OC

SUBJECT: Balloon Parabolics /

1. Attached are some ideas on the subject. I know that [] is producing large units, and that [] Radio has a 15' dish, although who manufactures it is not known.

25X1

2. The firm requirement is for a high-gain pouchable antenna system. The balloon parabolic seems to offer distinct advantages.

3. It is requested that OC-E explore the field. Items of this type have been budgeted for.

25X1

Attachment:

Ideas on Balloon Parabolic (2 copies)

Distribution:

Original and 1 - Addressee

25X1

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STANDARD FORM NO. 64

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Page Denied

Next 1 Page(s) In Document Denied

INTERNAL
ONLY

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ROUTING AND RECORD SHEET

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SUBJECT: (Optional)

Balloon Parabolics

FROM:

Chief, Supplemental Programs Division, OC
1613 Alcott Hall
4393

NO.

SPM 7-247

DATE

25 November 1957

TO: (Officer designation, room number, and building)

DATE

RECEIVED

FORWARDED

OFFICER'S
INITIALS

COMMENTS (Number each comment to show from whom to whom. Draw a line across column after each comment.)

1. Chief, Engineering Division, OC
1800 Alcott Hall

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15.

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CJH

J. J. MA

ACTION
FCS FCS~~SECRET~~

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INTERNAL
USE ONLY

UNCLASSIFIED

The following constitutes the firm design requirements for these five complete antennas:

- A. Breakdown and packaging for transportation in containers not to exceed 20" x 20" x 12" outside dimensions.
- B. Receiving only from 10,000 mcs down to 700 or 800 mcs. (The lower limit will be determined as that frequency where the gain of the parabolic equals a conventional array.)
- C. Minimum number of feed horns still maintaining a VSWR of better than 3 to 1.
- D. Fifty ohms unbalanced feed using high quality coaxial cable for minimum loss.
- E. The maximum operating space to accommodate the reflector, feeds, and blower will be seven feet high, nine feet wide, by nine feet deep.
- F. The blower for inflating the antenna must be electrically free of interference and audibly quiet outside the room of operation.
- G. Ninety degree manual rotation of the feeds must be provided for polarization changes.
- H. Side lobe response should be at least 10 db. below the main lobe.
- I. The blower motor should be capable of operating from 110/220 volts 50/60 cycle sources as well as 12 volts d.c. (If a complete motor change for direct current operation is required, we request that we be advised for determining the quantity desired.)
- J. A simple and inexpensive azimuth indicator attached to the reflectors. This should be established as a firm requirement.
- K. The following table of beam patterns and gain are established as a guide but the maximum gain is requested except at 10,000 mcs where the beam width must not be smaller than two degrees.

<u>FREQ. MCS</u>	<u>GAIN</u>	<u>BEAM WIDTH</u>
800	22 db	13°
1860	28 db	6.5°
4320	34 db	3.1°
10000	36 db	2.5°

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- L. The main criteria for these antennas is maximum gain, highly flexible for installation, and packagable in 20 x 20 x 12 inch containers.

In establishing a contract, we request that all R+D work required should be priced against the first antenna with four additional units as a basic construction order.